This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (currently amended): A method for producing a high capacitance core element for integral inclusion in a printed circuit board comprising the steps of:

preparing a slurry by dispersing a hydrothermally prepared nanopowder in a solvent, said nanopowder comprising a particle size of less than .10 microns;

preparing a composite mixture by mixing a bonding material with the slurry;

forming the composite mixture into a dielectric layer less than about 6 mil thickness; and

disposing a conductive layer upon at least one side of the dielectric layer.

Claim 2. (original): The method of claim 1 further comprising the step of curing the dielectric layer.

Claim 3. (original): The method of claim 1 wherein the step of preparing a slurry comprises the step of dispersing the hydrothermally prepared nanopowder in an organic solvent.

Claim 4. (original): The method of claim 3 wherein the step of dispersing the hydrothermally prepared nanopowder comprises dispersing the powder in an initial volumetric ratio of between about 20 percent and about 40 percent powder by volume.

Claim 5. (original): The method of claim 3 wherein the step of dispersing comprises dispersing the nanopowder in a member selected from the group consisting of methyl ethyl ketone, dimethyl formamide, and a mixture of methyl ethyl ketone and dimethyl formamide.

Claim 6. (original): The method of claim 1 wherein the step of preparing a slurry comprises sonicating the nanopowder and the solvent.

Claim 7. (original): The method of claim 1 wherein the step of preparing a slurry comprises milling the nanopowder and the solvent.

Claim 8. (original): The method of claim 3 wherein the step of preparing a slurry comprises generating a colloidal suspension by mixing a surfactant with the nanopowder and solvent.

Claim 9. (original): The method of claim 7 wherein the step of preparing a composite mixture comprises adding a polymer matrix material to the colloidal suspension to form a homogenous powder-polymer-solvent suspension.

Claim 10. (original): The method of claim 1 wherein the steps of preparing a composite mixture and curing the dielectric layer result in a dielectric layer having between about 40 percent and about 55 percent nanopowder by volume.

Claim 11. (original): The method of claim 1 wherein the step of forming the composite mixture into a dielectric layer comprises impregnating a fiberglass sheet with the composite mixture.

Claim 12. (original): The method of claim 1 wherein the step of forming the composite mixture into a dielectric layer comprises selecting a member from the group consisting of extruding, spraying, rolling, dipping, and casting the composite mixture.

Claim 13. (original): The method of claim 1 wherein the step of disposing a conductive layer comprises laminating a conductive foil onto the dielectric layer.

Claim 14. (original): The method of claim 1 wherein the step of disposing a conductive layer comprises placing the composite mixture upon a conductive foil prior to curing the dielectric layer.

Claim 15. (original): The method of claim 1 wherein the step of disposing a conductive layer comprises metallizing the side of the dielectric layer.

Claim 16. (original): The method of claim 15 wherein the step of metallizing comprises evaporating, sputtering, or chemical vapor depositing a conductive material upon the dielectric layer.

Claim 17. (currently amended): A method for producing a high capacitance core element for integral inclusion in a printed circuit board comprising the steps of:

preparing a composite mixture by mixing a bonding matrix material with a slurry comprising a suspension of hydrothermally prepared nanopowder, said nanopowder comprising a particle size of less than .10 microns;

forming the composite mixture into a dielectric layer; and

disposing the dielectric layer between two conductive layers.

Claim 18. (original): The method of claim 17 further comprising the step of dispersing the hydrothermally prepared nanopowder in an organic solvent.

Claim 19. (original): The method of claim 18 wherein the step of dispersing the hydrothermally prepared nanopowder comprises dispersing the powder in an initial volumetric ratio of between about 20 percent and about 40 percent powder by volume.

Claim 20. (original): The method of claim 18 further comprising the step of sonicating the nanopowder and the solvent.

Claim 21. (original): The method of claim 18 further comprising the step of milling the nanopowder and the solvent.

Claim 22. (original): The method of claim 17 further comprising the step of mixing a surfactant with the nanopowder and solvent.

Claim 23. (original): The method of claim 17 wherein the step of mixing a bonding matrix material comprises mixing a polymer to form a nanopowder-polymer-solvent suspension.

Claim 24. (original): The method of claim 17 further comprising the step of curing the composite mixture to produce a dielectric layer having between about 40 percent and about 55 percent nanopowder by volume.

Claim 25. (original): The method of claim 17 wherein the step of forming the composite mixture into a dielectric layer comprises impregnating a fiberglass sheet with the composite mixture.

Claim 26. (original): The method of claim 17 wherein the step of forming the composite mixture into a dielectric layer comprises selecting a member from the group consisting of extruding, spraying, rolling, dipping, and casting the composite mixture.

Claim 27. (original): The method of claim 17 wherein the step of disposing a conductive layer comprises laminating a conductive foil onto the cured dielectric layer.

Claim 28. (original): The method of claim 17 wherein the step of disposing a conductive layer comprises the steps of:

placing the composite mixture upon a conductive foil; and then

curing the dielectric layer.

Claim 29. (original): The method of claim 17 wherein the step of disposing a conductive layer comprises metallizing the side of the dielectric layer.

Claim 30. (original): The method of claim 29 wherein the step of metallizing comprises evaporating, sputtering, or chemical vapor depositing a conductive material upon the dielectric layer.

Claim 31. (original): A dielectric material integrally included in a printed circuit board said dielectric material comprising a ferroelectric nanopowder having a cubic crystalline structure prepared using a low temperature chemical precipitation process and having particle size ranging from about 10 to 200 nanometers, a polymer resin, preferably a polymer epoxy, intermittently dispersed in the form of a film, said film disposed between two conducting layers.

Claim 32. (original): The dielectric material of claim 31 wherein said film comprises a nanopowder/bonding agent ratio of about 30 to about 60 percent powder by volume.

Claim 33. (original): The dielectric material of claim 31 wherein said dielectric nanopowder is barium titanate.

Claim 34. (original): The dielectric material of claim 31 wherein said conducting layers comprise copper.

Claim 35. (original): The dielectric material of claim 31 further comprising a surfactant, preferably a non-ionic phosphate ester.